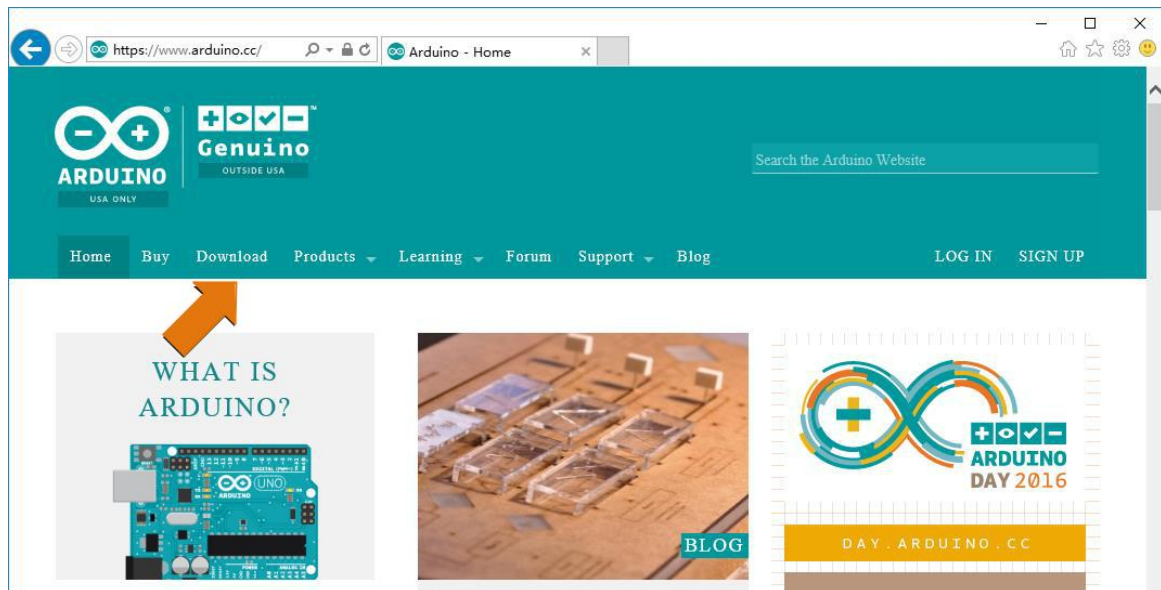


Programming the Arduino

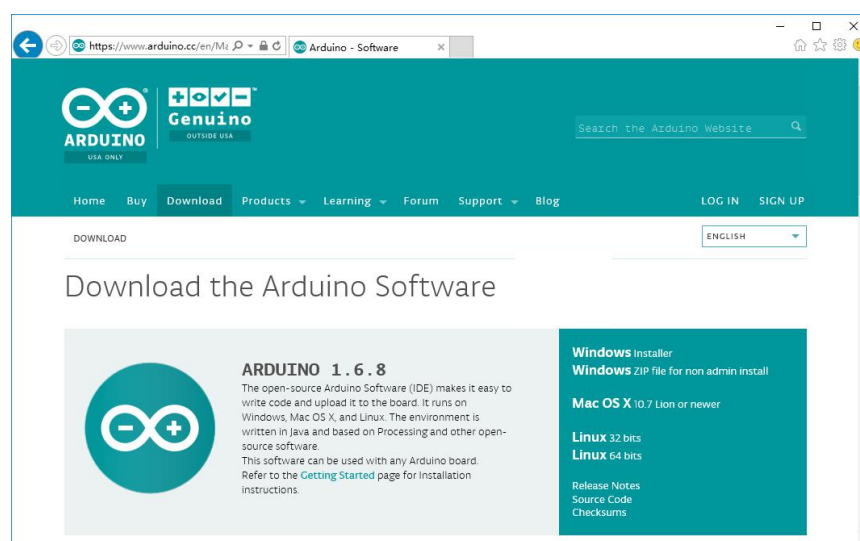
Arduino Software

Before you can write programs and download them to the Arduino you need to install some software to enable our computer to talk to the Arduino.

Go to www.arduino.cc/ and you will see the following screen. Click on the download button.



Next select the correct operating system for your computer and download it to your computer.

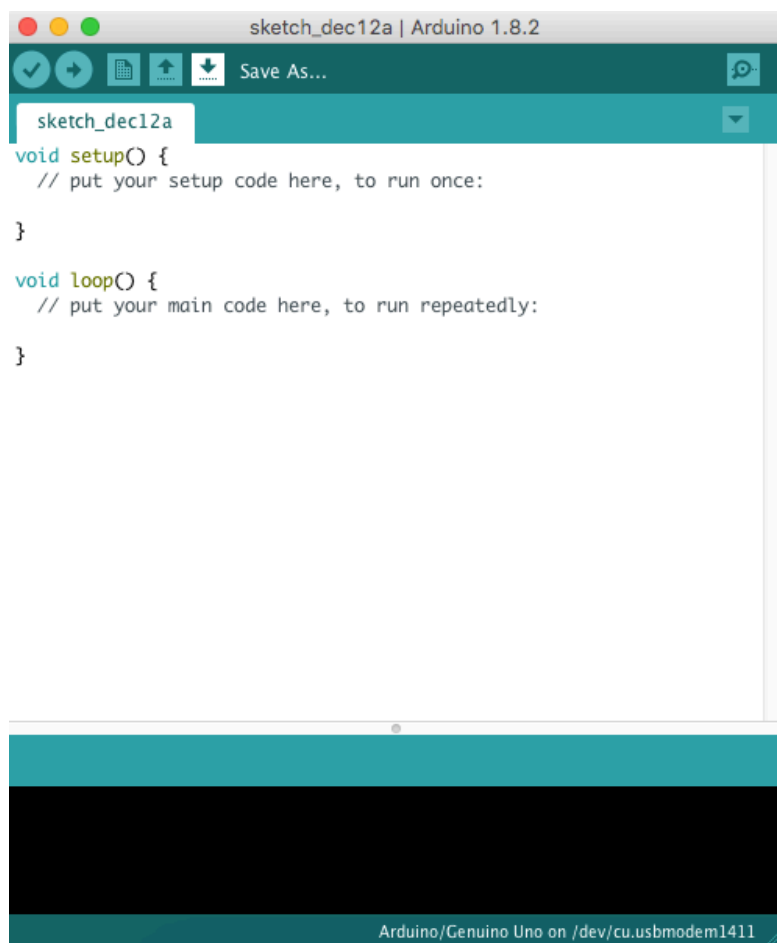


Programming the Arduino

Once the installer is downloaded, click on installer and follow the instructions. This will load the Arduino software and be available when you see this icon:









You are now ready to learn the basics. When you start Arduino you should see the following screen:



When you write programs in the Arduino IDE we call them sketches and they are given a .io suffix. When you save them they are saved into a folder called Arduino in the documents folder of the computer. The sketches are saved in folders with the same name as the sketch itself.

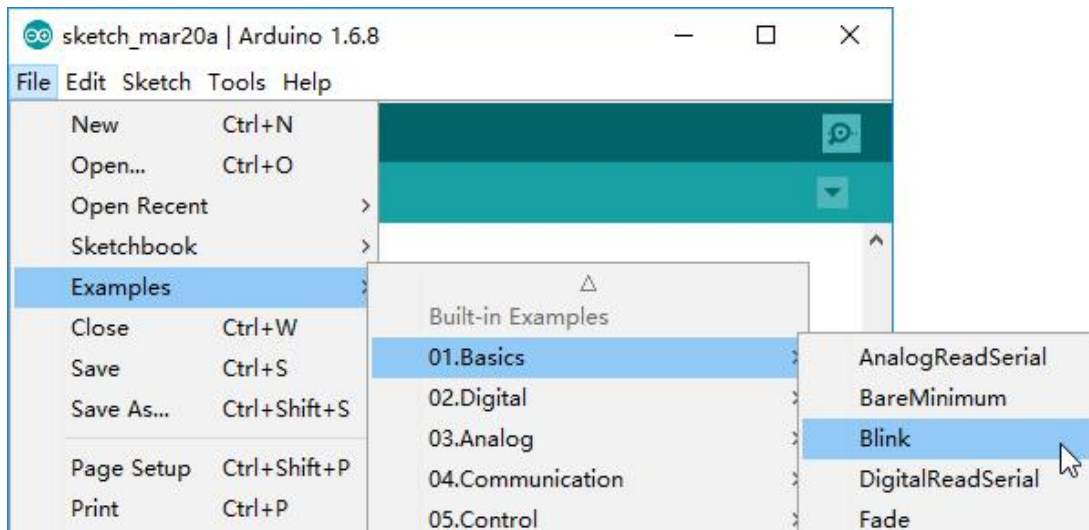
Controls at the top of the sketch screen

-  **Verify**
Checks your code for errors compiling it.
-  **Upload**
Compiles your code and uploads it to the configured board.
-  **New**
Creates a new sketch.
-  **Open**
Presents a menu of all the sketches in your sketchbook. Clicking one will open it.
-  **Save**
Saves your sketch.
-  **Serial Monitor**
Opens the serial monitor.

A quick way to understand the basic principles of the software is to run one of the example programs provided in the software.

Blinking an LED

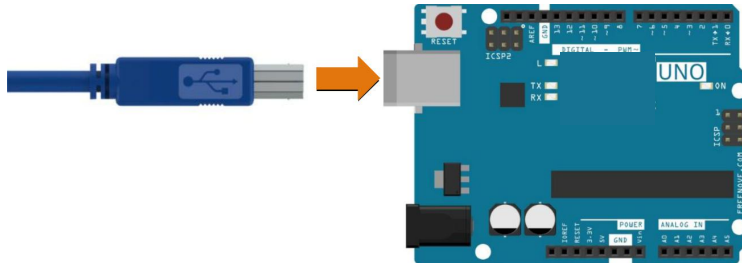
Go to the top menu, select File - Examples – 01.Basics - Blink:



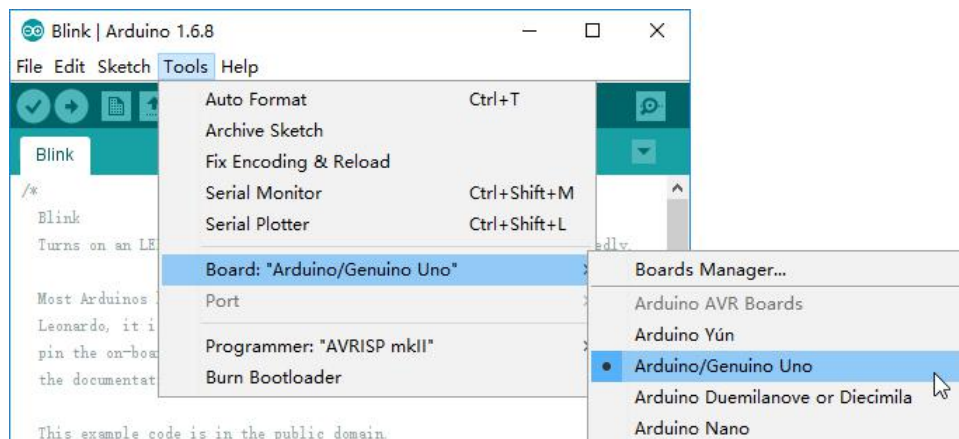
This will bring up a sketch called Blink.

Programming the Arduino

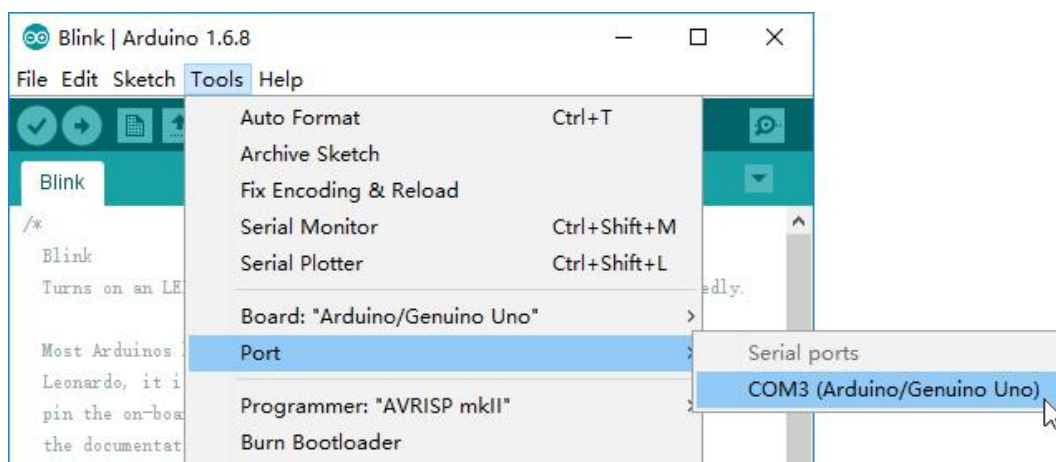
We now need to attach the Arduino to a USB port. We can then identify this port and use it to compile (or download programs) to the Arduino:



Now go to Tools – Board and select Arduino/Genuino Uno:



Now go to Tools – Port and select Serial Port (This may say COM.. or USB depending on your operating system):

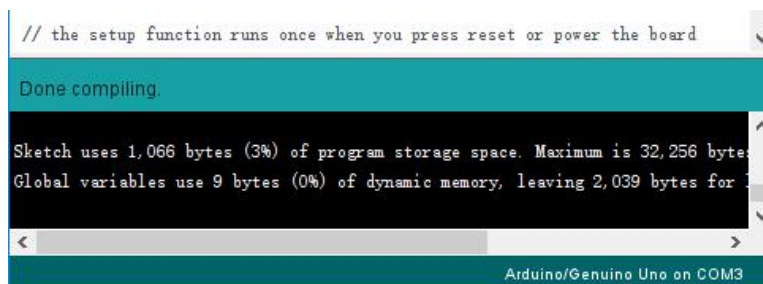


Programming the Arduino

Now you need to press the upload button (right pointing arrow) and the program will download into the Arduino. You should see the green line at the bottom move across



and then a confirmation of success will appear in the lower screen:



If there is a problem the sketch will stop and a red error message (or messages) will be displayed in the lower screen.

You should now see the LED on the Arduino flashing. Congratulations you have now run your first sketch and the world is your oyster (as they say).

Although teaching you to program in Arduino is beyond the scope of this kit, you do need to have a basic familiarity with the programming to understand what is happening and how to extend your knowledge and go further.

There are many excellent resources online that can be used to teach yourself more fully and develop your understanding. Below are some resources you may find helpful.

- <https://www.arduino.cc/en/Tutorial/HomePage>
- <https://randomnerdtutorials.com/arduino-step-by-step-projects/>
- <https://startingelectronics.org/software/arduino/learn-to-program-course/>

Arduino boards and components for all kinds of projects
can be purchased from Himalayan Edge – Nepal
Contact us for details.